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Inaugural Dissertation

on

Hydrothorax.

by

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Member of the Philadelphia Medical Society. —

An Introduction

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An Inaugural Dissertation  
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The end I have chiefly in view in this essay, is to exhibit the causes, symptoms, and most approved plan of treatment in that species of diaphysical effusion denominated Hydrothorax. The thoracic cavity is lined, and the different viscera are enveloped by membranes which in a healthy state secrete a fluid calculated to lubricate the containing viscera; but when from disease the quantity of the fluid is increased, as the absorbent powers of the lymphatics are deficient, an accumulation takes place, and Hydrothorax is established.

The situation of the fluid varies; in some instances it is confined to the pericardium, or membranes covering of the heart; most frequently in one or both cavities of the pleura; in other cases in the cellular texture surrounding the bronchia; and in some rare instances, in all of the above mentioned situations. In addition to these varieties in the location of the fluid,

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It is sometimes confined in sacks, in which case it is designated by the term encysted.

The disease is most frequently met with in males, particularly those whose corporeal frame have suffered from the use of opulentious potations; Individuals whose constitutions have been prematurely wrecked by debauched habits, persons of this description are frequently seen in the public institutions for the reception of paupers.

Women are also subject to the disease, and especially those who have frequent attacks of peripneumonia pectoris, Plethora, and other pneumonic affections, on whom it is not infrequently preceded with amenorrhoea, and children are least in order of frequency the subjects of its attack.

Remote causes of Hydrothorax. These are very numerous, it is not infrequently met with anasarca, and is an effect of a general dropsical habitus; drownings is a prolific source of the disease. The improper use of mercury, exposure to cold during convalescence, especially when the patient is predisposed to the disease, frequent attacks of misplaced gout, it is often an attenu-

dent on organs affected  
etc.

Inflammation  
continuous terminates  
in suppuration or in  
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solid or debilitated  
parts in an effusion  
etc. Exposure to cold  
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dant on organic affections of the heart, and aneurisms of the aorta.

Inflammation acting upon a debilitated system sometimes terminates in an effusion of serum when the antiphlogistic remedies have been sparingly used; hence when inflammation occurs in part contained in the cavity of the chest in debilitated persons, it not infrequently terminates in an effusion of serum, and thus produces the disease. Exposure to cold is also a remote cause of the complaint, and also those causes producing general dropsy, as visceral obstructions, scarlatina, &c.

### Symptoms of Hydrothorax.

These indicate considerable functional derangement in the thoracic viscera, many of which are referable to a compression of the lungs, these however vary from the situation of the effused fluid.

There are however, some symptoms common to several species, which I shall first enumerate, and then proceed to notice the symptoms attendant on the fluid in each.

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there is thirst.  
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and pneumonia

situation, is that a diagnosis may in most instances be established.

*Hydrothorax* generally commences with pain and uneasiness at the scrobiculus cordis, and often pain in one or other side of the thorax; a loaded high coloured serum is said by Blackall to be generally one of the first symptoms. There is dyspnoea which is much increased upon motion, and a horizontal position; the patient is troubled with a cough which is dry in the commencement, and as the disease advances it is attended with expectoration; there is often oedematous extensor, and a leucophlegmatic countenance expressive of much anxiety; the lips are purple, the patient's sleep is much disturbed, often he awakes with palpitations, and a fear of immediate suffocation; the pulse varies considerably; generally it is small, quick and irregular, and sometimes tense; in addition to these symptoms, there is thirst and scarcity of urine; as the disease advances the symptoms are aggravated; a pain and numbness in the arms, extending to the

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insertion of the deltoid muscle. The most distressing symptom is orthopnea; this term is expressive of a disorder, in which respiration can be performed only in an upright posture, so that the patient is obliged to rest at night in a chair.

Many of the above symptoms are not properly pathognomonic, but often accompanies these, diseases of the chest; and it is a combination of them that affords us evidence of the existence of Hydrothorax. The difficulty in some instances is very great; a fluctuation is sometimes perceived by the patient or practitioners; where this is present we can entertain no doubt as to the existence of the affection.

Percussion of the chest as recommended by Corvisart, is sometimes effectual in detecting the presence of fluid in the chest; it is also stated by respectable authority, that the symptoms are aggravated by pushing the abdomen; from the capacity of the Thorax being lessened in consequence of the ascent of the diaphragm. The bowels are generally -

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disordered with flatulency and costiveness, the appetite is generally impaired.

When the fluid is confined to the cavity of the pericardium, the patient experiences most relief when he is erect, with his body inclined forward, the pulse is more irregular, the patient feels as if his heart were swimming in a fluid, and the fluctuation is more frequently observable in this situation than any other.

It is also observed by Corvisart, that patients afflicted with *Hydrops pericardii*, feel a painful sensation, and a distressing weight about the region of the heart, a difficulty of breathing as high as emphysema suffocation; when he wishes to assume a horizontal posture, he often experiences dyspnoea, but more rarely palpitation.

The pulse is small, weak, frequent, concentrated and irregular, by applying the hand over the region of the heart, tremulous and obscure beats are felt, it may be said that the heart causes its strokes to be felt through a fluid, situated between it and the parietes of

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The *Thorax*. Where percussion is performed, it is obvious, in some cases the left side of the *Thorax* is higher, rounder, and more convex than the right.

When the fluid is situated in the cellular texture surrounding the bronchia and air cells, it is designated by the term *Hydrops pulmonum*, or *anasarca pulmonum*, and is distinguished by the following signs, for which it is indebted to the writings of *Le Boissier*.

The difficulty of respiration is constant, and increased by the least motion, though not much varied by the different attitudes of the body; the patient complains of great anxiety about the *precordia*, and when he attempts to make a deep inspiration, he finds it impossible to dilate the chest, and his breath seems to be suddenly stopped, &c.

The most obvious mark of distinction, is, the circumstance that dyspnoea is not increased by change of posture; for the water being confined to the substance of the lungs, it continues to press equally in all positions of the body.

It remains for me to notice the most common;

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form of Hydrothorax, or that in which the fluid is located, in one or both cavities of the pleura.

15 The symptoms enumerated above, I have only to observe, when the fluid is situated in the cavity of the pleura on one side, a corresponding enlargement on that side of the thorax is sometimes observable. When both cavities participate in the disease, it is more frequently associated with general dropsy.

20 delineate with accuracy the line of demarcation between the different species of Hydrothorax, is a task of acknowledged difficulty, and of little practical utility; except with a view for the operation of paracentesis.

The difficulty of ascertaining to a certainty, the existence of water in the chest, in many cases, and particularly in the early stage of the disease, is generally acknowledged; and to obtain a correct diagnosis of this and other diseases of the chest, have been long a desideratum in medical science; and although much attention has been paid to it, it is confessed, that our

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Caution against the  
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dependence on a diet

knowledge in relation to the subject, is still very uncertain. This is ascribed to the many diseases incident to these parts, and the symptoms common to many being very similar; and the powerful sympathy existing between the and other parts of the body adds not a little to this uncertainty.

Contemplating these difficulties, Quercet was induced by a series of observations and experiments, to construct an instrument by which the difficulty is solved, and the presence of tubercles, liquid extravasations, and other diseases may be known and distinguished.

The construction of the instrument, and mode of application to the disease which is the particular object of this inquiry is subjoined.

### Treatment of Hydrothorax.

Cullen asserts that Hydrothorax will seldom admit of a cure or alleviation. The views which Dr. Cullen entertained of dropsies in general, accounts for his ill success; conceiving it to depend on a debilitated state of the system, a plan

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In referring to the causes of Hydrothorax, it will be observed that many of them are calculated to excite the system. The views entertained by and distinguished professor Chapman, and in opposition to Dr Cullen, and the ample experience and success of his practice, strengthens and confirms the correctness of his observations.

Blackell, is also an advocate for the inflammatory nature of dropsy.

In the treatment of this disease, and prescription should be regulated by the state of the system and the causes producing the disease, as it is generally symptomatic.

Our object should be first to remove the effused fluid, and secondly to alter the state of the system, and remove the causes occasioning the effusion.

In the attainment of the first object, paracentesis has been recommended, and occasionally practised from the most ancient period, to the present day.

The propriety of drawing off the effused fluid in

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this form of dropsy is questioned; certainly no circumstances but the most urgent symptoms could justify the measure; the danger to be apprehended is inflammation; and a collapse of the lungs.

In some instances from indolent absorption, the lungs are very much diminished, and upon evacuating the fluid the lungs are unable to perform their functions: it is of only limited application for when the fluid is situated in the substance of the lungs the operation will not relieve; when situated in the pericardium the operation is inadvisable: although this operation has been performed, the results have been for the most part unfavourable.

The second mode of removing the fluid is by exciting or increasing the action of the lymphatics, and for this purpose diuretics are employed.

The state of the system should be carefully attended to; if any febrile symptoms are present, venesection should be resorted to, and topical bleeding by the application of cups to the chest is often necessary; it is a fact mat.

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strenuously insisted upon by professor Chapman, that as long as the arterial system continues active, the absorbent powers of the lymphatics are fully exerted; after having reduced the system to the necessary standard, we should resort to diuretics.

The best of this class is the squilla maritima in substance, tincture, vinegar, syrup, or ozymel. It not only proves diuretic, but it also promotes expectoration; by the former operation it increases the action of the lymphatics, and by this operation removes the effusion by the latter it renders the patient more comfortable.

The operation of this medicine is much promoted by a mild mercurial course, and hence a popular practice is to combine these two articles; a salivation is considered very flattering.

Blackell, whose accurate observations on the urine, entitles his opinion to much respect, states from experience, that the squill is much to be depended on, where the urine is scanty, high coloured, full of sediment, and without serum.

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used it round service when the urine is partially coagulable;  
but in proportion as that symptom becomes more marked  
by its extreme constitutional character, inflammation and weak-  
ness of the digestive organs, it fails in its effects or is even  
injurious. Blackall.

The dose of dried squill in substance is  
three grains two or three times a day.  
Dr. Chapman recommends in combination with calomel  
in proportion of three grains of the former, to one of the latter,  
to be made into pills, one of which may be given morning,  
and evening. In some cases to calomel iridolations of opium  
may be added, as follows

Rf Scilla Marit. ʒi.

Calomel ꝑ℞℥ ʒss

Opii — ʒss

Mix ꝑ℞℥ ss

One of which may be taken in the morning, a second  
at noon and a third in the evening.

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In general this medicine will not be continued long before a copious diuresis follows, which is productive of immediate relief.

In addition to this, a succession of blisters to the chest, or as to keep up constant discharges, is very effectual, especially when the patient complains of local pain. The tincture and the other preparations may be taken in the dose of half a drachm, gradually increased, and its operation assisted by the blue pill.

An interesting question here presents itself, whether the squill is most effectual when nausea or vomiting is produced, or otherwise?

The question has been particularly discussed by Cullen and Horne. Horne was of opinion, that the squill is most effectual when it produced vomiting. Cullen on the other hand, mentioned that this operation counteracted the diuretic properties, and consequently, proved injurious; subsequent authors have generally agreed in the correctness of Cullen's views.

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To compose the patient, anodynes, Hoffmann's anodyne liquor, or the op. Acetosa may be given to the patient. The article next in importance is the digitalis purpurea; this was first introduced into regular practice by Dr. Withering, and highly extolled in the various kinds of dropsy, and particularly in Hydrothorax; it confidently was thus recommended by Withering, Darwin, and other celebrated practitioners, as to induce an idea that it was specific, much of this confidence has abated, and although very uncertain in its operation, it may in some cases prove serviceable.

The Syzygium has been extensively used in the United States with very doubtful success; this has tended to bring the article into discredit.

The ~~unsuccess~~ attending the use of the article in this country, is supposed to be owing to the deteriorated state from exposure to light and air or other causes impairing the activity of the remedy.

The digitalis is particularly recommended in fevers of a debilitated system, weak pulse, cold surface, and

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when complicated with general dropsy, Dr. Sarsen ✓  
was most successful in dropsy, occurring in drunkards,  
and gives agreeable bitters with anodynes.

Digitalis promises success when the urine is turbid,  
and deposits a bloody sediment, and partially coagulable  
by heat cure of dropsy following Scarlatina, where  
this discharge is high coloured and deposits a sediment  
it uniformly fails. Blackall.

This if correct, is a circumstance that we cannot  
appreciate too highly.

Where the system is excited, a strong pulse and other  
symptoms of febrile action, the use of the digitalis is  
precluded.

There are four forms in which digitalis  
is commonly employed, viz: in substance, infusion,  
tincture, and Sarsen's saturated tincture. ✓

The dose of the article in substance is from one to  
three grains twice a day; of the infusion, as prepared,

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by Withering from one ounce, to two ounces, in the twenty  
four hours. The dose of Larrea's saturated tincture, is  
from thirty to ninety drops in the course of the day.  
It is stated by Withering, that eight ounces of the infu-  
sion may be taken in most cases before nausea commences,  
and of the powder thirty grains.

The above are the doses as recommended by Blackall  
and subsequently adapted by the highest authorities.  
The mode of making the different preparations may be  
found on the dispensatories, constantly keeping in view  
the activity of the article; the dose should be small at first  
and gradually increased in quantity, until some constitu-  
tional effects are produced. The most favorable of these is  
diuresis: When this takes place the medicine should be  
discontinued; the same remark is applicable to the down-  
nation in the arterial system to its nauseating the stomach,  
and also to its purging the patient. For the best method  
of counteracting the injurious effects of an over quantity of  
digitalis, I refer to Chapman's Therapeutics. —  
Forriè recommends the digitalis to be discontinued at

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the expiration of a week, unless some benefit has been experienced during that time. The super-Cutis, plaster has been employed with success, particularly by Parry; the result of his practice is detailed in his medical histories and reflections, vol 4th.

The carbonate of potash, is particularly serviceable when the stomach is much disordered. It is recommended by Wing to assist its operation by the vegetable matters.

Purgings is another method employed to increase the action of the lymphatics; but in Hydrothorax this method is said to be inadmissible.

How far emetics would succeed, I was unable to say, from my own experiences; that they stimulate the absorbent system into increased action, have been sufficiently proven.

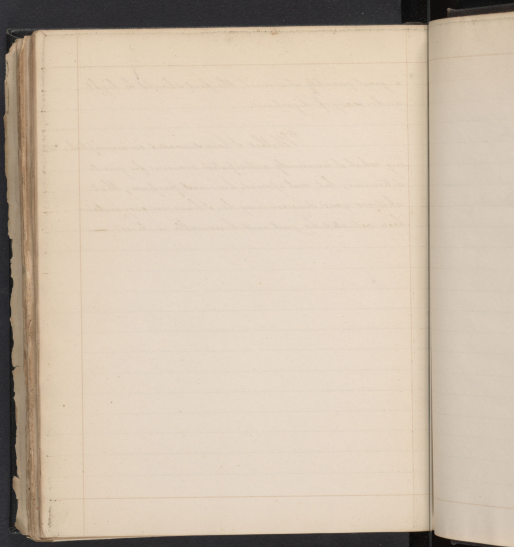
The bowels should be kept regular by mild laxatives. The diet should be regulated by the state of the system; the patient should not eat

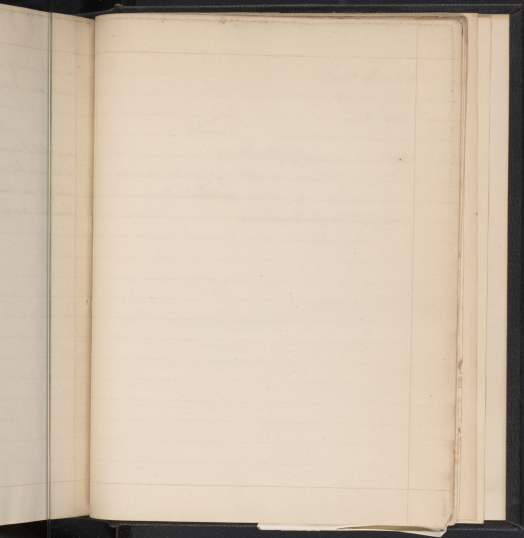
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a great quantity at a meal, the food should be light  
and easy of digestion.

Whether I have succeeded in accomplish-  
ing what I anxiously anticipated remains for you to  
determine; but, rest assured, honoured professor, that  
whatever your decision may be, I have in every instance  
been actuated by just and honourable motives. —





Errata

- 3, series for very  
4. attendant for attendant.  
5. admittens  
5. Existences for existences  
6. Drapheon for Drapheon  
6. Parities p. 8. Denotation p. 11. Collapse for collapse  
13. Scilla for Sella 14. Propositions 15. purpuria  
16. 15. Darwin's Darwin. Newscaps  
17. 12. Ferris for Ferris